PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Takashi MIYAKAWA et al. Group Art Unit: 1732

Application No.: 10/717,502 Examiner: J. WOLLSCHLAGER

Filed: November 21, 2003 Docket No.: 117848

For: PROCESS FOR PRODUCTION OF FORMED HONEYCOMB BODY, AND HONEYCOMB STRUCTURE

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

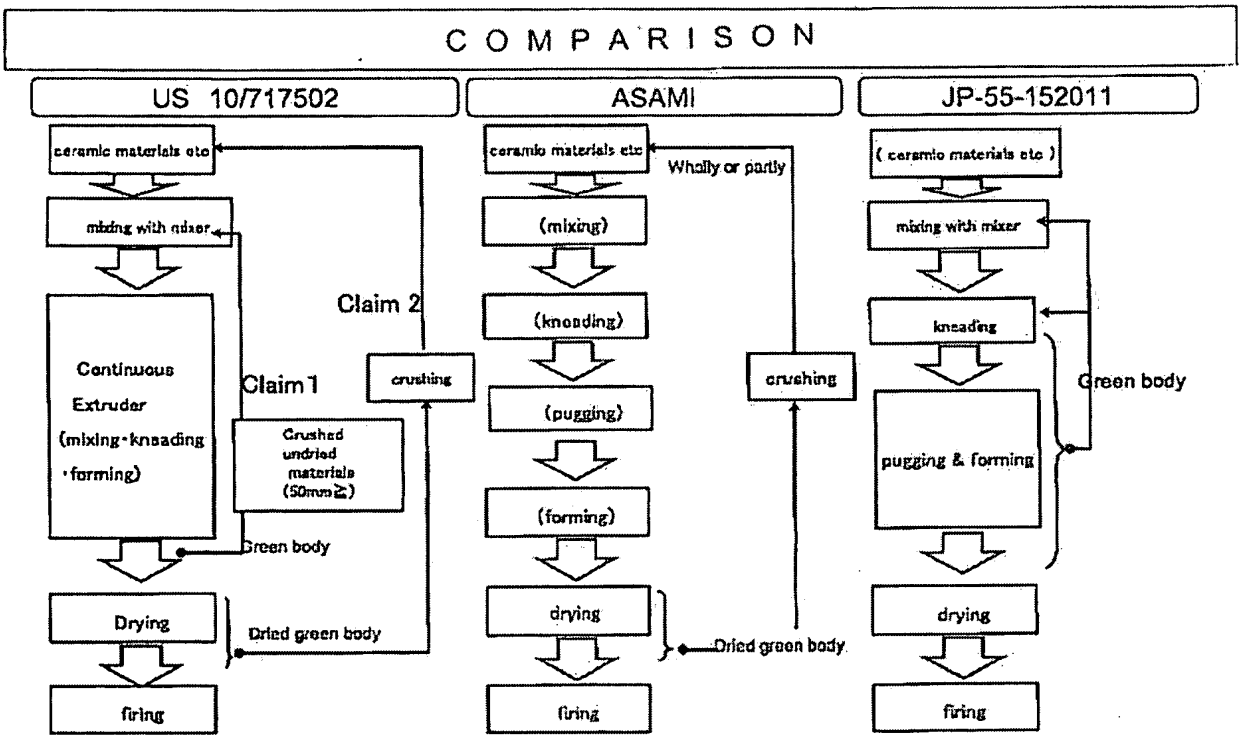
Sir:

A Notice of Appeal and Petition for Extension of Time are filed herewith. Applicants respectfully request review of the December 4, 2006 rejection.

This review is requested because the rejection of claims 1-10 and 13 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,851,376 (Asami) in view of JP55-152011 (JP011) is clearly in error for at least the following reasons.

Independent claim 1 recites a "process for producing a formed honeycomb body, the process comprising, *inter alia*, mixing a raw material for forming a honeycomb body structure containing at least a ceramic raw material powder, a binder and water, to obtain a compounded mixture for forming a green body; adding a predetermined amount, to the raw material for forming the honeycomb body, a powdery material obtained by crushing a crushed green body obtained from a rejected product of an undried formed material, and a resulting mixture is mixed to obtain the compounded mixture; and kneading and extruding the compounded mixture into a honeycomb shape by a continuous extruder; wherein the mixer includes a hoe that rotates at a low speed and a chopper having a cross-shaped blade that rotates at a high speed" (emphasis

added). As defined in Applicants' claim 1 and made clear in Applicants' specification on paragraph [0026], the "raw material for forming a honeycomb body structure" contains a ceramic raw material, a binder and water. The process is illustrated in the chart below.



As recognized, Asami fails to teach "the mixing of undried reclaimed material with a raw ceramic material" (instead Asami teaches adding reclaimed crushed dried material directly into the supply of ceramic powder as shown above). Alternatively, Asami (col. 8, lines 45-54) adds water to dried, uncrushed reclaimed material for mixture for the express purpose of avoiding mechanical impacts (i.e., crushing) by instead forming a slurry.

The Office Action and subsequent Advisory Action rely on JP011 for the missing feature and allege the references are "obvious to combine" because: 1) Asami teaches adding water to a dried reclaimed material in order to reduce the mechanical impact on the particles; and 2) one of ordinary skill in the art would have been motivated to combine Asami and JP011 to eliminate an undesired process step (drying) because Asami teaches that adding water is beneficial and JP011 shows that drying is not required. These assertions are based on incorrect premises, and/or are otherwise improper.

I. Alleged Combination Fails to Teach All Claimed Features

First, even if the combination as alleged were made, the combination fails to teach each and every feature recited in independent claim 1. For example, if the drying step of Asami were omitted as alleged, the resultant "wet" reclaimed material would still be added directly to new ceramic powder (see chart). Thus, this combination fails to teach adding of the reclaimed material to "raw material for forming a honeycomb body" (defined in the claim and specification to include ceramic powder, binder and water).

Alternatively, because both the alternative embodiment of Asami (col. 8, lines 45-54) and JP011 teach that "wet" reclaimed material can be reintroduced without crushing, the Office Action impermissibly fails to consider each reference "as a whole," including portions that "teach away" from the invention. That is, when read as a whole, the combination including the alternative embodiment of Asami may have led one of ordinary skill in the art to also omit crushing when using "wet" reclaimed material. This combination would also fail to teach each and every feature of Applicants' independent claim 1 or claims 2-10 dependent therefrom. Thus, a *prima facie* case of obviousness has not been established.

II. Prior Art Fails to Appreciate Problem Being Solved

Moreover, neither reference appreciates the problem with mixing crushed undried (wet) reclaimed material with ceramic powder. As explained in Applicants' paragraphs [0004] - [0007], such a combination would result in lumping due to the water content in the reclaimed material. Thus, even though Asami's reclaimed material is crushed, the "wet" material in the alleged combination would attract dry ceramic powder and form fist-sized lumps, which will result in non-uniform mixing and problems during extrusion.

Thus, the combination as alleged would result in the very problem addressed in Applicants' background and overcome by the recited process features, including adding of crushed, undried reclaimed material to "raw material for forming a honeycomb body" (ceramic

powder, binder and water). Because the problem is not recognized, the solution thereof would not have been obvious (*In re Sponnoble*, 405 F.2d 578, 160 USPQ 237 (CCPA 1969)). It should be noted that this problem is not faced by Asami's specific teachings because ground, dried reclaimed material is mixed with virgin ceramic powder and will not clump.

Further, JP011 is not concerned with reclaiming rejected formed product, or problems with lumping. Instead, JP011 discloses a punching method wherein chip-like articles are obtained by punching a kneaded material. A pottery raw material having moderate amount of water is extruded by a vacuum extruding machine, and part of the pottery raw material extruded from the vacuum extruding machine is returned back to the process before kneading to facilitate kneading of the raw pottery material so as to decrease distortion. That is, it simply removes and re-adds the same material to facilitate further kneading. Because this problem is not faced in Asami, there would have been no recognized need for the combination absent impermissible hindsight. As a result, there would have been no motivation to combine JP011 with Asami.

For at least the aforementioned reasons, a *prima facie* case of obviousness has not been met with respect to independent claim 1 or claims 2-10 dependent therefrom.

III. Office Action Impermissibly Relies on Official Notice

Moreover, with respect to various dependent claims, the Office Action admits that specific dependent claim features are missing, and relies solely on "Official Notice" that optimization is routine and would have rendered the claimed ratios obvious to one of ordinary skill in the art. However, the Advisory Action fails to address Applicants' Request for Reconsideration arguments that while only routine skill in the art may be required to discover an optimum value of a recognized result-effective variable, the relative ratios of claims 3 and 4 are not recognized in the prior art as a result-effective variable, particularly when neither reference is concerned with adding of crushed, undried material.

That is, dependent claims 3 and 4 are directed to a specific ratio of crushed, undried green body relative to the mass of the ceramic raw material powder in the mixed raw material for the honeycomb body. The cited prior art does not even use crushed, undried green body and thus could not have established a result-effective variable, particularly in light of the arguments above in which neither reference even recognizes problems faced by "wet" crushed green body being added to a powder component.

Therefore, relying on MPEP §2144.05(II)(B), Applicants assert that a *prima facie* case of obviousness has not been established with respect to at least dependent claims 3-4.

IV. Conclusion

In view of the foregoing, Applicants maintain that all of the pending claims are patentable over the applied prior art, and request the Review Panel to reverse the rejection and allow the application.

Should the Review Panel believe that anything further is desirable to place the application in even better condition for allowance, it is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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